c) genetically engineering activated T cells to comprise therapeutic benefit in the treatment of said patient's cancer.

10. The method of claim **9** wherein, in step c), the activated T cells are genetically engineered to comprise modified cell surface receptors of therapeutic benefit in the treatment of said patient's cancer.

11. The method of claim **10**, wherein, the modified cell surface receptors of therapeutic benefit are chimeric antigen receptors (CARs).

12. The method of claim **9**, wherein the sample is obtained by apheresis

13. The method of claim **9**, wherein the sample is obtained by leukapheresis.

14. The method of claim **9**, wherein the platelets in the enriched product of paragraph a)ii) are depleted by at least 80% compared to the sample and/or there are no more than 5 platelets per leukocyte in the enriched product.

15. The method of claim **9**, wherein, the genetically engineered T cells are collected by transferring them into a pharmaceutical composition for administration to a patient.

16. A method for preparing a therapeutic composition comprising genetically engineered T cells, comprising:

a) purifying T cells from sample obtained from a patient, wherein the sample comprises leukocytes and platelets; the leukocytes comprise T cells and the T cells are purified by:

i) performing a size based separation using a microfluidic device configured to separate cells by deterministic lateral displacement to produce an enriched product in which, compared to the sample, the percentage of cells that are platelets has been reduced;

ii) in addition to the size based separation, performing an affinity based separation by binding T cells to a carrier that binds to T cells with specificity, and then separating the carrier-bound T cells from cells not bound to carrier;

b) after the purification of step a), activating and expanding the T cells to produce a composition in which the percentage of T cells that are central memory T cells has increased compared to the percentage of T cells that are central memory T cells in the sample;

c) genetically engineering the activated T cells.

17. The method of claim **16**, wherein the sample is an apheresis sample.

18. The method of claim **16**, wherein the sample is a leukapheresis sample.

19. The method of claim **16**, wherein, after the cells are prepared, they are administered to said patient.

20. The method of claim **16**, wherein the platelets in the enriched product of paragraph a)i) are depleted by at least 80% compared to the sample and/or there are no more than 5 platelets per leukocyte in the enriched product.

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